

AMENDMENTS TO THE CLAIMS

Please cancel Claims 1 and 10-12; and amend Claims 2, 3, 7, 8, 9, 13 and 14 as follows.

LISTING OF CLAIMS

1. (canceled)

2. (currently amended) ~~The steam engine according to claim 1, further comprising:~~ A steam engine for converting thermal energy into mechanical energy at an output portion, comprising:

a fluid container for flowably containing fluid;

a heater for heating the fluid contained in the fluid container;

a cooler for cooling a vaporized portion of the fluid that was vaporized by being heated by the heater, the cooler being disposed below the heater in a direction of gravity's acceleration;

wherein an expansion pressure of the vaporized portion of the fluid displaces a flowing liquid portion of the fluid to output the mechanical energy, and the cooler cools and liquefies the vaporized portion of the fluid to displace the flowing liquid portion of the fluid contained in the fluid container with self-excited vibration;

exciting means disposed proximate to the heater, the exciting means applying a periodical exciting force to the fluid contained in the fluid container[.]; and

a piston that is actuated by the expansion pressure of the vaporized portion of the fluid.

3. (currently amended) ~~The steam engine according to claim 2,~~ A steam engine for converting thermal energy into mechanical energy at an output portion, comprising:

a fluid container for flowably containing fluid;

a heater for heating the fluid contained in the fluid container;

a cooler for cooling a vaporized portion of the fluid that was vaporized by being heated by the heater, the cooler being disposed below the heater in a direction of gravity's acceleration;

wherein an expansion pressure of the vaporized portion of the fluid displaces a flowing liquid portion of the fluid to output the mechanical energy, and the cooler cools and liquefies the vaporized portion of the fluid to displace the flowing liquid portion of the fluid contained in the fluid container with self-excited vibration;

exciting means disposed proximate to the heater, the exciting means applying a periodical exciting force to the fluid contained in the fluid container; and

a piston that is actuated by the expansion pressure of the vaporized portion of the fluid; wherein

the exciting force is a reaction force of a compression of gas charged in a gastight enclosure, and the exciting means applies the exciting force to the fluid contained in the fluid container.

4. (original) The steam engine according to claim 2, wherein the exciting means applies force to the fluid contained in the fluid container in a cycle out of phase with a cycle of the self-exciting vibration generated in the fluid container.

5. (original) The steam engine according to claim 2, wherein the exciting means applies force to the fluid contained in the fluid container in a cycle one-quarter cycle out of phase with a cycle of the self-exciting vibration generated in the fluid container.

6. (original) The steam engine according to claim 4, wherein the exciting means comprises:

a first gas chamber for containing a gas for directly applying the exciting force to the fluid contained in the fluid container; and

a second gas chamber coupled to the first gas chamber via throttle means for generating a predetermined flowing resistance.

7. (currently amended) The steam engine according to claim ~~[[1]]~~ 2, wherein a regenerator is provided between the heater and the cooler, and the regenerator exchanges heat in the fluid contained in the fluid container.

8. (currently amended) The steam engine according to claim ~~[[1]]~~ 2, wherein the fluid container is approximately formed in the shape of a U so that a bent pipe is positioned in the lowermost part thereof, and liquid is displaced back and forth in the bent pipe with self-excited vibration.

9. (currently amended) The steam engine according to claim [[1]] 2, wherein the fluid container is formed in a double cylindrical shape so as to have an outer cylinder and an inner cylinder coupled to each other in the lower portions thereof, and fluid is displaced back and forth in a coupling tube for coupling the outer cylinder and the inner cylinder with self-excited vibration.

10.-12. (canceled)

13. (currently amended) The steam engine according to claim [[1]] 2, wherein the cooler and the heater are disposed separate from each other in the direction of gravity, and the output portion is provided proximate to the cooler.

14. (currently amended) The steam engine according to claim [[1]] 2, wherein the output portion has any one of a piston and bellows displaced with vibration, output is taken out of the piston or bellows, the piston or bellows receives pressure from flowing liquid.

15. (original) The steam engine according to claim 4, wherein force is applied to the fluid contained in the fluid container in the cycle out of phase, to extend time for heat exchange between the heater or the cooler and the fluid.